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David L. Abney

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## LIABILITY FOR DEFECTIVE AERONAUTICAL CHARTS

DAVID L. ABNEY\*

ONE OF THE MOST insidious dangers facing air travellers is an inaccurate aeronautical chart. Among the aerial crashes of past decades, many can be attributed to flight and navigational aids which steered pilots into unmarked obstructions or erroneously promised safe and adequate landing approaches and facilities at the proposed destination. All too often, the maps and charts which should have guaranteed safety have instead engendered tragedy. The two primary suppliers of aeronautical charts in this country are the national government and Jeppesen Sanderson, a subsidiary of the Times Mirror Company ("Jeppesen"). There are special problems in establishing the culpability of either the United States or a private chartmaker for an allegedly unsound chart, although many of the defenses raised by each are similar.<sup>1</sup>

### CASES AGAINST CHARTMAKERS

From its headquarters in Englewood, Colorado, Jeppesen provides enroute area and approach charts and electronic flight information for the Western Hemisphere and Pacific regions. The Jeppesen office in Frankfurt,

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\* David L. Abney completed his legal education at the University of Arizona, College of Law in 1983 and is now an associate with Streich, Lang, Weeks & Cardon in Phoenix, Arizona.

<sup>1</sup> See generally McCowan, *Liability of the Chartmaker*, 47 INS. COUNS. J. 359 (1980) (examination of potential liability of publishers of aviation instrument approach charts).

West Germany supplies similar items for Europe, Asia, the Middle East, and Africa.<sup>2</sup> Enroute charts display large geographic segments — several states or so in size — and flight paths or airways. Area charts show regions around major metropolitan areas and the applicable airways. Approach charts (or “plates”) portray runways and the vertical and horizontal coefficients of the runway approach paths.<sup>3</sup>

Most of the litigation against Jeppesen has centered on its approach and landing charts. Jeppesen makes landing charts for every commercial airport in the United States. They are used by every certificated and uncertificated air carrier and by most private pilots.<sup>4</sup> The Federal Aviation Administration designs, tests, and promulgates standard airport instrument approach procedures,<sup>5</sup> which Jeppesen then converts into its own unique format:

Jeppesen approach charts depict graphically the instrument approach procedure for the particular airport as that procedure has been promulgated by the Federal Aviation Administration (FAA) after testing and administrative approval. The procedure includes all pertinent aspects of the approach such as directional heading, distances, minimum altitudes, turns, radio frequencies and procedures to be followed if an approach is missed. The specifications prescribed are set forth by the FAA in tabular form. Jeppesen acquires this FAA form and portrays the information therein on a graphic approach chart. This is Jeppesen’s “product.” . . .

Each chart portrays graphically two views of the proper approach. The top portion is the “plan” view, depicted as if one were looking down on the approach segment of the flight from directly above. The bottom portion depicts the “profile” view, presented as a side view of the approach with a descending line depicting the minimum allowable

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<sup>2</sup> JEPPESEN WORLDWIDE FLIGHT INFORMATION CATALOG (1986).

<sup>3</sup> *Saloomey v. Jeppesen & Co.*, 707 F.2d 671, 672 (2d Cir. 1983).

<sup>4</sup> *See, e.g.*, *Aetna Cas. & Sur. Co. v. Jeppesen & Co.*, 463 F. Supp. 94, 96 (D. Nev. 1978).

<sup>5</sup> *Brocklesby v. United States*, 767 F.2d 1288, 1292 (9th Cir. 1985).

altitudes as the approach progresses. The plan view is regarded as a superior method of presenting course and course changes; the profile view as a superior method of presenting altitude and altitude changes. Each chart thus conveys information in two ways: by words and numbers, and by graphics.<sup>6</sup>

As a matter of customary practice, most Jeppesen approach charts have the same or roughly the same scale for both the plan and profile views.<sup>7</sup>

Of the six published cases in which plaintiffs have attempted to hold Jeppesen liable for allegedly misleading aerial charts, the chartmaker has prevailed in only two. While the recovery theories have ranged from breach of warranty to negligence, the greatest success has come under strict product liability. In every instance, Jeppesen has litigated the case vigorously and appealed any adverse decision. The results have been strenuous legal battles that raged for many years.

A good example of Jeppesen's determination is *Aetna Casualty v. Jeppesen*, a case which spanned over seventeen years and six reported opinions.<sup>8</sup> In *Aetna*, a Bonanza Airlines plane crashed in 1964 while landing in Las Vegas, Nevada. The survivors of the crew sued Jeppesen, asserting that the crash was caused by a defective approach chart. The jury returned a verdict of liability.<sup>9</sup> When the airline insurer, Aetna Casualty and Surety, subsequently settled the wrongful death actions brought by representa-

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<sup>6</sup> *Aetna Cas. & Sur. Co. v. Jeppesen & Co.*, 642 F.2d 339, 341-42 (9th Cir. 1981).

<sup>7</sup> *Id.* at 342.

<sup>8</sup> A Jeppesen motion to dismiss for lack of jurisdiction was the first published decision. *Jeppeson [sic] & Co. v. Eighth Judicial District Court*, 83 Nev. 329, 431 P.2d 260 (1967). After *Aetna*, the airline insurer, settled some of the wrongful death actions, the focus shifted to indemnity issues. See *Aetna Cas. & Sur. Co. v. Jeppeson [sic] & Co.*, 344 F. Supp. 1381 (D. Nev. 1972) (federal jurisdiction granted); 440 F. Supp. 391 (D. Nev. 1977) (denial of motion to dismiss based on statute of limitations); 440 F. Supp. 394 (D. Nev. 1977) (estoppel issues decided against Jeppesen); 463 F. Supp. 94 (D. Nev. 1978) (merits of indemnity), *vacated*, 642 F.2d 339 (9th Cir. 1981) (remanded for reapportionment of damages although determination of defect in chart approved).

<sup>9</sup> 344 F. Supp. at 1383.

tives of passengers killed in the crash, a protracted dispute arose between Aetna and Jeppesen over the proper indemnity apportionment of damages.<sup>10</sup> The existence of a flaw in the Jeppesen chart was the one issue decided early and affirmed throughout the proceedings.

Although they proceeded in a conclusory fashion, the courts in *Aetna* found the chart defective within the meaning of Section 402A of the *Restatement (Second) of Torts*.<sup>11</sup> Even though most Jeppesen approach charts use roughly the same visual scale for the plan and profile views of an approach, a fact that a pilot and navigator would come to take for granted, the Las Vegas chart was quite different:

The "defect" in the chart consists of the fact that the graphic depiction of the profile, which covers a distance of three miles from the airport, appears to be drawn to the same scale as the graphic depiction of the plan, which covers a distance of 15 miles. In fact, although the views are the same size, the scale of the plan is five times that of the profile.<sup>12</sup>

The chartmaker was unsuccessful in its arguments that the two graphic scales were not normally similar, that the Bonanza crew could not reasonably have detrimentally relied on such a correlation in their final approach, and that the legend on the chart adequately explained the differing scales by means of words and figures. The appellate court held these factors insufficient to make the chart safe for its intended use:

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<sup>10</sup> See *supra* note 8.

<sup>11</sup> RESTATEMENT (SECOND) OF TORTS § 402A (1965) provides as follows:

(1) One who sells any product in a defective condition unreasonably dangerous to the user or consumer or to his property is subject to liability for physical harm thereby caused to the ultimate user or consumer, or to his property, if (a) the seller is engaged in the business of selling such a product, and (b) it is expected to and does reach the user or consumer without substantial change in the condition in which it was sold. (2) The rule stated in subsection (1) applies although (a) the seller has exercised all possible care in the preparation and sale of his product, and (b) the user or consumer has not bought the product from or entered into any contractual relation with the seller.

<sup>12</sup> 642 F.2d at 342.

While the information conveyed in words and figures on the Las Vegas approach chart was completely correct, the purpose of the chart was to translate this information into an instantly understandable graphic representation. This was what gave the chart its usefulness — this is what the chart contributed to the mere data amassed and promulgated by the FAA. It was reliance on this graphic portrayal that Jeppesen invited.<sup>13</sup>

The trial judge found that the Las Vegas chart “radically departed” from Jeppesen’s usual presentation of graphics in its other charts. The court further held that the conflict between the information conveyed by words and numbers and the information conveyed by graphics rendered the chart unreasonably dangerous and a defective product.<sup>14</sup> Interestingly, Jeppesen revised the Las Vegas chart after the accident and conformed the scale on the profile view with the plan view.<sup>15</sup>

The judicial conclusion that the Jeppesen chart was a “product” for purposes of Section 402A strict liability was never seriously challenged in the *Aetna* cases. Once the plaintiffs established that the chart was a proximate cause of the crash, the burden of proof shifted to Jeppesen “to prove that on balance the benefits of the challenged product or its design outweigh the risk of danger inherent in such design.”<sup>16</sup> The chartmaker was unable to establish that the benefits of using different scales on one chart could outweigh the extraordinary dangers of a crash posed by the misleading product.<sup>17</sup>

Jeppesen was more fortunate in *Times Mirror Co. v. Sisk*,<sup>18</sup> a 1978 decision of the Arizona Court of Appeals. The case arose from the crash of a Pan American 707 cargo jet into Mount Komunay on the approach path to

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<sup>13</sup> *Id.*

<sup>14</sup> *Id.*

<sup>15</sup> 463 F. Supp. at 96.

<sup>16</sup> *Id.* at 95. The district court followed the approach outlined in *Barker v. Lull Engineering Co.*, 20 Cal. 3d 413, 573 P.2d 443, 143 Cal. Rptr. 225 (1978).

<sup>17</sup> 463 F. Supp. at 95-97.

<sup>18</sup> 122 Ariz. 174, 593 P.2d 924 (Ct. App. 1978).

Manila International Airport in the Philippines. The jet was following a route approved by the Philippine government and depicted by Jeppesen on one of its standard graphic approach charts. Pan American management was aware of the route but had not discussed it with the Philippine government. The pilot not only misinterpreted his distance from the airport as he descended, but also veered to the left. As a result, he guided the aircraft into the mountain, killing everyone aboard. The Jeppesen approach chart did not show the presence of Mount Kamunay at all.<sup>19</sup>

The survivors and Pan Am sued Jeppesen, alleging that the incomplete chart was the proximate cause of the disaster. The recovery theories were strict product liability under Section 402A, product misrepresentation under Section 402B,<sup>20</sup> and breach of the warranty of fitness under the Uniform Commercial Code.<sup>21</sup> The jury rendered a unanimous verdict in favor of Jeppesen on all counts. The trial judge, however, accepted the plaintiffs' position and granted judgment non obstante veredicto.<sup>22</sup>

Writing for the appellate panel, Judge Howard set aside the judgment n.o.v. and ordered the trial court to enter judgment in favor of the chartmaker.<sup>23</sup> Judge Howard had "serious misgivings" as to whether this was truly a

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<sup>19</sup> *Id.* at 175-77, 593 P.2d at 925-27.

<sup>20</sup> RESTATEMENT (SECOND) OF TORTS § 402B (1965) provides:

One engaged in the business of selling chattels who, by advertising, labels, or otherwise, makes to the public a misrepresentation of a material fact concerning the character or quality of a chattel sold by him is subject to liability for physical harm to a consumer of the chattel caused by justifiable reliance upon the misrepresentation, even though (a) it is not made fraudulently or negligently, and (b) the consumer has not bought the chattel from or entered into any contractual relation with the seller.

<sup>21</sup> COLO. REV. STAT. §§ 4-2-314(2), 4-2-315 (1974). The parties stipulated before trial that Colorado law would control liability and Arizona law would govern damages. This approach was justifiable as to Colorado since it was the place of publication of the chart. 122 Ariz. at 175, 593 P.2d at 925.

<sup>22</sup> 122 Ariz. at 175, 593 P.2d at 925.

<sup>23</sup> *Id.* at 180, 593 P.2d at 930.

products liability case at all,<sup>24</sup> although reversal came on the narrow issue that the original verdict was sufficiently supportable to be immune from judgment n.o.v.<sup>25</sup> Even if the chart were considered a defective product, the court concluded that the pilot was so far off track that the chart was not the actual cause of the crash.<sup>26</sup>

Several years later, in *Saloomey v. Jeppesen & Co.*,<sup>27</sup> the court specifically found a Jeppesen chart to be a product<sup>28</sup> which was indeed defective and the direct cause of a fatal accident. In *Saloomey* the pilot of a small private plane attempted a full instrument landing at a West Virginia airfield. The field had equipment which would inform the pilot if he were on the proper flight path but no device to give the glide altitude. The pilot would know if he were lined up with the airport, but not how high he was on approach. The plane was equipped with all the electronic gear needed for a full instrument landing and a Jeppesen area chart which falsely portrayed the airfield as having a complete instrument landing system. The attempt to land in reliance on the presence of a full instrument landing complex ended abruptly when the plane descended too far too fast and crashed into a ridge.<sup>29</sup>

The estates brought diversity actions against Jeppesen which were consolidated for trial in Connecticut federal district court, claiming negligence, breach of warranty and strict products liability. As in almost all interstate aviation accidents, the court immediately faced a thorny choice of law problem. The laws of Colorado, Connecticut and West Virginia all potentially applied to the dispute, and

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<sup>24</sup> *Id.* at 177, 593 P.2d at 927.

<sup>25</sup> *Id.* at 178, 593 P.2d at 928.

<sup>26</sup> *Id.* at 179, 593 P.2d at 929.

<sup>27</sup> The district court opinion bears the appellation of *Halstead v. United States*, 535 F. Supp. 782 (D. Conn. 1982), *aff'd sub nom.* *Saloomey v. Jeppesen & Co.*, 707 F.2d 671 (2d Cir. 1983). The plaintiffs had originally claimed that federal air traffic controllers were also negligently responsible for the crash, but the district court dismissed those claims after a bench trial found no proximate cause. 707 F.2d at 673 n.3.

<sup>28</sup> 535 F. Supp. at 791.

<sup>29</sup> 707 F.2d at 672-74.



each significantly differed from the others. Connecticut and Colorado allowed strict products liability; West Virginia did not.<sup>30</sup> West Virginia limited recovery to \$10,000 for the wrongful death itself and \$100,000 for special damages and monetary losses.<sup>31</sup> Colorado law allowed a survivor who was not a widow, widower, minor child, or dependent mother or father of the decedent to recover no more than \$45,000.<sup>32</sup> Connecticut was the most generous, permitting recovery for the value of the decedent's life as well as relevant special damages.<sup>33</sup> The legally significant factual relationships to the crash also varied among the states. West Virginia was the physical location of the disaster. Connecticut was the domicile of the decedents.<sup>34</sup> Colorado was Jeppesen's state of incorporation and principal place of business, as well as the place where Jeppesen sold the chart.<sup>35</sup>

In order to determine the governing law, federal precedent required the application of Connecticut conflict of laws rules.<sup>36</sup> In tort actions, Connecticut courts had traditionally followed *lex loci delicti*, the law of the place of injury, meaning that the restrictive law of West Virginia would control.<sup>37</sup> Many jurisdictions had already abandoned the superannuated *lex loci delicti* approach in favor of applying the law of the forum having the most significant relationship to the parties and the tortious occurrence, the rule embodied in Section 145 of the *Restatement (Second) of Conflict of Laws*.<sup>38</sup> Moreover, the new

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<sup>30</sup> 535 F. Supp. at 786.

<sup>31</sup> *Id.* at 785.

<sup>32</sup> COLO. REV. STAT. § 13-21-203 (1973); 535 F. Supp. at 786 n.3.

<sup>33</sup> 535 F. Supp. at 785.

<sup>34</sup> 707 F.2d at 676.

<sup>35</sup> *Id.*

<sup>36</sup> *Klaxon Co. v. Stentor Elec. Mfg. Co.*, 313 U.S. 487, 491 (1941).

<sup>37</sup> 707 F.2d at 674.

<sup>38</sup> 535 F. Supp. at 787. RESTATEMENT (SECOND) OF CONFLICT OF LAWS § 145 states:

(1) the rights and liabilities of the parties with respect to an issue in tort are determined by the local law of the state which, with re-

standard would give flexibility to efficiently handle contemporary transportation mishaps:

Invocation of the *lex loci delicti* rule in aviation-generated wrongful death actions often produces unpredictable and undesirable results; the locale of injury may well have no connection to other relevant factors such as the parties' domiciles or residences, their places of incorporation, their principal places of business, or the location of the wrongful conduct.

The *Restatement (Second)* approach recognizes this inherent unpredictability and ameliorates it by including the place of injury in a choice-of-law analysis which also examines the relationship and other contacts between the parties.<sup>39</sup>

District Judge Eginton determined that the Connecticut

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spect to that issue, has the most significant relationship to the occurrence and the parties under the principles stated in § 6.

(2) Contacts to be taken into account in applying the principles of § 6 to determine the law applicable to an issue include:

- (a) the place where the injury occurred,
- (b) the place where the conduct causing the injury occurred,
- (c) the domicile, residence, nationality, place of incorporation and place of business of the parties, and
- (d) the place where the relationship, if any, between the parties is centered.

RESTATEMENT (SECOND) OF CONFLICT OF LAWS § 145 (1971).

The court noted that these contacts are to be evaluated according to their relative importance with respect to the particular issue. 535 F. Supp. at 787 n.5.

Section 6 of the RESTATEMENT (SECOND) provides:

(1) A court, subject to constitutional restrictions, will follow a statutory directive of its own state on choice of law.

(2) When there is no such directive, the factors relevant to the choice of the applicable rule of law include

- (a) the needs of the interstate and international systems,
- (b) the relevant policies of the forum,
- (c) the relevant policies of other interested states and the relative interests of those states in the determination of the particular issue,
- (d) the protection of justified expectations,
- (e) the basic policies underlying the particular field of law,
- (f) certainty, predictability and uniformity of result, and
- (g) ease in the determination and application of the law to be applied.

RESTATEMENT (SECOND) OF CONFLICT OF LAWS § 6 (1971).

<sup>39</sup> 707 F.2d at 674-76.

courts were ready to accept the *Restatement (Second)* test.<sup>40</sup> An analysis of the situation led to the conclusion that Colorado was the state with the most significant overall relationship to the accident.<sup>41</sup> The Court of Appeals for the Second Circuit agreed, observing that Jeppesen could hardly "contend that the application of Colorado substantive law to actions involving alleged defects in those charts was unforeseeable, unpredictable, or fortuitous."<sup>42</sup>

Having decided that Colorado substantive tort law controlled the action, the court still had to ascertain if the Colorado doctrine of strict products liability under Section 402A of the *Restatement (Second) of Torts* was applicable. Jeppesen asserted that its approach chart was "a service rather than a product and that the paper the map was printed on was merely the method by which the information was conveyed to subscribers."<sup>43</sup> Analogizing its charts to the services given by doctors to their patients or architects and engineers to their clients, Jeppesen claimed it was not subject to strict products liability.<sup>44</sup> The plaintiffs argued that the chart was "a tangible product sold by a corporation whose business is the mass manufacture and distribution of thousands of such products."<sup>45</sup>

Judge Eginton systematically considered the nature of the Jeppesen chart:

This court will not make any automatic or sweeping classification. Whether a transaction involving the sale of a map constitutes the rendition of a professional service or the sale of a tangible product poses a difficult question of semantics since there is an element of service in all "goods"

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<sup>40</sup> 535 F. Supp. at 788. The approach taken by the federal court was severely criticized by one commentator as an "intrusive prediction that will tend to limit the role of the Connecticut court in developing conflicts law." Note, *Prediction by Federal Courts — A Self-Fulfilling Prophecy?: Saloomey v. Jeppesen & Co.*, 17 CONN. L. REV. 415, 416 (1985).

<sup>41</sup> 535 F. Supp. at 789. A similar analysis established that Colorado law controlled the damages and warranty issues. 535 F. Supp. at 791-95.

<sup>42</sup> 707 F.2d at 676.

<sup>43</sup> 535 F. Supp. at 789.

<sup>44</sup> *Id.*

<sup>45</sup> *Id.*

whether maps or consumer durables. All require some skilled service in initial design as well as in the transformation of raw materials into finished product.<sup>46</sup>

He noted analogous labor law cases holding that plans, maps and plats could be "goods," as well as the *Restatement* intent that Section 402A would place special liability on those marketing mass-distribution defective products to the general public.<sup>47</sup>

The presence of some professional skill in the creation of an informational chart did not preclude subjecting Jeppesen to strict products liability:

Given that Jeppesen *mass produced* and distributed its charts, its activity comes within the scope of the rationale of § 402A and should not be insulated from a strict standard of liability by virtue of metaphysical and semantic quibbling.

....

If suitable for mass marketing, the information is in some sense a fungible good for which the manufacturer placing it on the market must assume responsibility.

... Jeppesen mass produced and distributed thousands of charts on the aviation market. Implicit in their presence on the market was the representation that the purchaser could rely on their information safely. Exposing defendant Jeppesen's conduct to strict products liability is thus entirely appropriate.<sup>48</sup>

The appellate court concurred that strict liability for the approach chart was reasonable:

By publishing and selling the charts, Jeppesen undertook a special responsibility, as seller, to insure that consumers will not be injured by the use of the charts; Jeppesen is entitled — and encouraged — to treat the burden of accidental injury as a cost of production to be covered by liability insurance . . . . This special responsibility lies upon Jeppesen in its role as designer, seller and manufacturer.<sup>49</sup>

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<sup>46</sup> *Id.*

<sup>47</sup> *Id.* at 790-91.

<sup>48</sup> *Id.* at 791.

<sup>49</sup> 707 F.2d at 676-77.

The court of appeals affirmed the jury verdict for the plaintiffs on all three theories of liability — negligence, breach of warranty, and strict products liability.<sup>50</sup>

The “product” versus “service” issue was never even reached in the seven lawsuits filed against Jeppesen that arose from the Soviet destruction of Korean Air Lines Flight 007 in September of 1983.<sup>51</sup> The complaints alleged negligence, breach of warranty and strict liability, contending that the Jeppesen flight route charts used by the KAL crew “did not contain a warning explicitly noting the possible consequences of straying over Soviet territory and that the absence of an explicit warning was negligence, resulting in an ‘unreasonably dangerous’ product being released into the stream of commerce.”<sup>52</sup> The plaintiffs also claimed that the “Airspace Restricted Areas” portion of the chart should have specifically had a “Danger” or “Warning” designation for the area where the Soviet Union shot the airplane down.<sup>53</sup> These arguments were based primarily on the fact that United States Defense Department charts for the region gave a definite caution that intrusion into Soviet airspace could result in attack without warning.<sup>54</sup>

The district court granted Jeppesen’s motion to dismiss the case for failure to state an actionable claim. The court found that Jeppesen had no duty to place warnings on its charts identical to those used on military maps, implying that Jeppesen’s admonition on its chart was sufficient as a matter of law.<sup>55</sup> Although Jeppesen had argued that the intentional Soviet act was an unforeseeable superseding

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<sup>50</sup> *Id.* at 674, 679.

<sup>51</sup> *In re Korean Air Lines Disaster of September 1, 1983*, 597 F. Supp. 619 (D.D.C. 1984).

<sup>52</sup> *Id.* at 620.

<sup>53</sup> *Id.*

<sup>54</sup> *Id.*

<sup>55</sup> The warning on the Jeppesen chart read: “NAVIGATIONAL WARNING — Pilots flying Northern Route between United States and Japan avoid approaching or overflying territory under Soviet control, specifically the Kuril Islands.” 597 F. Supp. at 620.

cause, the court held that there had never been any proximate cause related to the chart that could be superseded:

Since there must be a causal connection between the Defendant's alleged omission and the harm to the Plaintiffs' decedents, the Plaintiffs must be able to show a connection between the wording of the warning and the intrusion into Soviet airspace. However, Plaintiffs here cannot claim that the Jeppesen chart caused the flight crew to do or fail to do anything which lead [*sic*] KAL 007 off its assigned course. Plaintiffs do not allege that the enroute chart was misleading or inaccurate in setting the flight path for KAL 007. They do not allege that the chart incorrectly depicted the land masses or bodies of water over which KAL 007 flew.

. . . .

[T]he Court finds that Plaintiffs cannot, under any set of circumstances, demonstrate a causal link between what happened to KAL 007 and the claims that the Jeppesen warning was inadequately worded. There being no "but for" cause attributable to Jeppesen, the issue of "superseding cause" need not be reached.<sup>56</sup>

Two reported cases against the chartmaker appeared in 1985. *Fluor Corp. v. Jeppesen & Co.*<sup>57</sup> concerned the crash of a Lockheed L-1329 Jet Star on approach to Adirondack Airport near Lake Saranac, New York. The plane hit the side of Johnson Hill at 2140 feet while attempting to land on a snowy night in December of 1972. Although Johnson Hill was 2257 feet high and constituted the highest point in the crash vicinity, it was not shown on the Jeppesen instrument approach chart. The highest hill depicted was only 1991 feet in elevation. The impact demolished the plane and killed all of its occupants. The jet owner sued Jeppesen for breach of warranty, negligence, and strict products liability.<sup>58</sup> Jeppesen claimed that the crew caused the catastrophe by flying too low in

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<sup>56</sup> *Id.* at 620-21.

<sup>57</sup> 170 Cal. App. 3d 468, 216 Cal. Rptr. 68 (1985).

<sup>58</sup> *Id.* at 473, 216 Cal. Rptr. at 70.

poor weather.<sup>59</sup> The trial judge refused to instruct the jury on the strict products liability theory, and the verdict was for Jeppesen on the warranty and negligence counts.<sup>60</sup>

Writing the opinion for the California Court of Appeals for the Second District, Associate Justice Gates agreed with the federal decisions classifying an approach chart as a "product."<sup>61</sup> Classifying the chart in this fashion would serve the important California goals of protecting the hapless victims of product flaws and spreading the compensation costs throughout society.<sup>62</sup> The trial judge had acknowledged that the chart was indeed a product, but decided that strict liability applied only to "items whose physical properties render them innately dangerous, e.g., mechanical devices, explosives, combustible or flammable materials, etc."<sup>63</sup> Justice Gates disagreed:

[A]lthough a sheet of paper might not be dangerous, per se, it would be difficult indeed to conceive of a salable commodity with more inherent lethal potential than an aid to aircraft navigation that, contrary to its own design standards, fails to list the highest land mass immediately surrounding a landing site.<sup>64</sup>

Moving to the defectiveness question, Justice Gates noted that a plaintiff could establish that a product was defectively designed if it either (1) failed to meet ordinary consumer expectations "when used in an intended or reasonably foreseeable manner" or (2) the benefits of the suspect design did not outweigh the risk of danger inherent in such design.<sup>65</sup> Jeppesen had indicated in the chart legend that the highest obstructions in the immediate area

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<sup>59</sup> *Id.* at 473-74, 216 Cal. Rptr. at 70.

<sup>60</sup> *Id.* at 473-80, 216 Cal. Rptr. at 70-74.

<sup>61</sup> *Id.* at 474, 216 Cal. Rptr. at 71.

<sup>62</sup> *Id.* at 474-75, 216 Cal. Rptr. at 70-71.

<sup>63</sup> *Id.* at 475, 216 Cal. Rptr. at 71.

<sup>64</sup> *Id.* at 476, 216 Cal. Rptr. at 71-72.

<sup>65</sup> *Id.* at 476, 216 Cal. Rptr. at 72. This follows the doctrine of *Barker v. Lull Eng'g Co.*, 20 Cal. 3d 413, 418, 573 P.2d 443, 452, 143 Cal. Rptr. 225, 228 (1978). See *supra* note 16 and accompanying text.

of the airport would be depicted, and Jeppesen's own production operations manual also required the marking of the highest points.<sup>66</sup> Once the plaintiff had presented sufficient circumstantial evidence from which to infer that the chart omission of Johnson Hill was a proximate cause of the crash, the burden shifted to the chartmaker to show that the product was not defective. Factors to be considered were "the gravity of the danger posed by the challenged design, the likelihood that such danger would occur, the mechanical feasibility of a safer alternative design, the financial cost of an improved design, and the adverse consequences to the product and to the consumer that would result from an alternative design."<sup>67</sup>

Justice Gates plainly thought that Jeppesen could not justify the incomplete presentation on the Adirondack approach chart:

Here the inclusion of Johnson Hill on respondent's chart in accordance with its own design rules apparently could have been accomplished with ease at negligible cost. Respondent, of course, has a legitimate concern that its charts not become too congested, a result which could itself create substantial safety problems. It does not appear, however, that such concern would have prevented the inclusion of Johnson Hill with or without the elimination of the lower Hill 1991; in fact, the FAA mandated its depiction following this tragic accident.<sup>68</sup>

Finally, Jeppesen argued that the implied jury instructions covered the substance of the strict liability doctrine and that the crew's negligence was a total bar to recovery. Justice Gates held that the implied warranty instructions did not adequately explain the requirement that a manufacturer take reasonable precautions to minimize harm arising from foreseeable misuse or abuse of its product.<sup>69</sup>

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<sup>66</sup> 170 Cal. App. 3d at 476-77, 216 Cal. Rptr. at 72-73.

<sup>67</sup> *Id.* at 478, 216 Cal. Rptr. at 73 (quoting *Barker*, 20 Cal. 3d at 431, 573 P.2d at 455, 143 Cal. Rptr. at 237). See *supra* notes 16 and 65.

<sup>68</sup> 170 Cal. App. 3d at 478, 143 Cal. Rptr. at 73.

<sup>69</sup> *Id.* at 479, 216 Cal. Rptr. at 74.



Moreover, Justice Gates would not preclude a strict liability claim even if the crew had negligently operated the aircraft while relying upon the map's inadequate representations:

To the degree this information was erroneous or misleading, it exposed to substantial danger any pilot who, for whatever reason, descended below the federally prescribed minimum altitudes in effect in the vicinity of the Adirondack Airport. It is obvious, of course, that failure to abide by these height regulations might constitute negligence. Nonetheless, it cannot be said as a matter of law that it was unforeseeable a pilot might still engage in such conduct in an attempt to effect a nighttime landing during adverse weather conditions at an airport which had non-precision approaches and no control tower, as was the case at Adirondack Airport. It is notable that the instant crash occurred while the aircraft was being flown at an altitude sufficient to clear Hill 1991, the highest obstruction in the vicinity of the accident site shown on respondent's chart. . . .<sup>70</sup>

We do not intend by the foregoing discussion to suggest that the question of the crew's alleged negligence may not have determinative significance. Comparative fault principles have been extended to actions founded on strict liability. However, for purposes of apportionment, appellant's *conduct* is to be compared not to the respondent's *conduct*, but to its *product*.<sup>71</sup>

Based upon the above mentioned rationale, the judgment was reversed and the case remanded for proceedings in accord with strict liability concepts.<sup>72</sup>

Plaintiffs were also successful against Jeppesen in *Brocklesby v. United States*,<sup>73</sup> a case involving the crash of a World Airways DC-8 cargo plane on approach to the Cold

<sup>70</sup> *Id.* at 477, 216 Cal. Rptr. at 73 (citations omitted).

<sup>71</sup> *Id.* at 480, 216 Cal. Rptr. at 74.

<sup>72</sup> *Id.*

<sup>73</sup> 767 F.2d 1288 (9th Cir. 1985). The case was discussed in Abramson & Smith, *Strict Liability for Publisher of Defective FAA Approach Procedure*, 15 CAL. TRIAL LAW. ASSOC. FORUM 276 (1985)[hereinafter cited as FORUM].

Bay, Alaska airport in 1973. The disaster killed all six crew members and destroyed the aircraft and its contents.

Although the National Transportation Safety Board attributed the crash to pilot error, a long and complex course of discovery against the federal government and the chart publisher, Jeppesen, revealed the following probable causes of the accident: (1) a defective approach procedure promulgated by the government and accurately portrayed and published by Jeppesen, which lacked a transitional arc 30 or 40 miles from the airport which would have kept the airplane above and away from the terrain, until the airplane had reached the specific compass point from which it could turn inbound over water for a direct approach and landing at the airport; (2) negligent traffic control advice to the airplane from the FAA facility at Anchorage; (3) transmission of inaccurate navigation signals from the Cold Bay Airport, causing cockpit instruments to indicate mistakenly that the airplane was located over water, when in fact it was flying over mountainous terrain.<sup>74</sup>

The survivors and the owner of the cargo plane sued Jeppesen and the United States Government, seeking both property and wrongful death damages. Since Jeppesen had accurately portrayed in its graphic form an admittedly flawed and dangerous instrument approach procedure developed by the federal government, Jeppesen was entitled to tort indemnity against the United States. The company chose to forego a tort suit and made a "secret contractual indemnity agreement" with its co-defendant.<sup>75</sup> In a bifurcated trial, a jury held Jeppesen liable on theories of negligence, breach of warranty and strict products liability. The general verdict against Jeppesen was in the amount of \$11,630,000. Shortly after the verdict against Jeppesen, and before its own bench trial, the United States settled with the plaintiffs for \$5,000,000, and was dismissed from the suit. World Airways received \$6,115,580.81 in a prejudgment interest

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<sup>74</sup> FORUM, *supra* note 73, at 276.

<sup>75</sup> FORUM, *supra* note 73, at 277.

award. After crediting the chartmaker with the \$5,000,000 settlement, the court entered a final judgment for \$12,785,580.81 against Jeppesen.<sup>76</sup>

On issues tangential to liability for a defective chart, Jeppesen objected to the admission of the indemnity agreement at trial. Although as a practical matter jury knowledge of the agreement would probably be somewhat prejudicial, the plaintiffs prevailed on this point by introducing the deal solely to attack the credibility of the defense witnesses and to show the true relationship of the various parties.<sup>77</sup> Jeppesen's challenge to the prejudgment interest award on the basis of uncertainty was also denied on appeal.<sup>78</sup>

Jeppesen next contended that, in any event, strict liability was inappropriate because the federal government landing procedure was beyond its power to control.<sup>79</sup> The court concluded that it was inaccurate for Jeppesen to extrapolate from the company's lack of direction over the government that it had no control over what would appear in the government's final published product. Company policy and directives required the employees to research any procedure for accuracy, completeness and validity.<sup>80</sup> Additionally, Jeppesen had high-level liaison with the FAA that had led to prior changes in other government flight procedures.<sup>81</sup> The court stated:

Accordingly, Jeppesen had both the ability to detect an error and a mechanism for seeking corrections. Under these

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<sup>76</sup> 767 F.2d at 1292.

<sup>77</sup> *Id.* at 1292-93. Jeppesen failed to ask for a limiting instruction at trial on this point and was denied relief from this oversight on appeal. The appellate court also refused to order enforcement of the indemnity agreement, since that would have to initiate in the claims court. The Ninth Circuit found that the trial was not so fundamentally unfair that it deprived Jeppesen of due process of law, even though the admitted indemnity agreement was not immediately enforceable by the district court. *Id.* at 1293-94.

<sup>78</sup> 767 F.2d at 1298-99.

<sup>79</sup> *Id.* at 1295-96. The breach of warranty theory was challenged only on the ground that the chart was not a "product." *Id.* at 1294 n.8.

<sup>80</sup> *Id.* at 1295-96.

<sup>81</sup> *Id.*

circumstances, we reject Jeppesen's argument that the Government's procedure was beyond Jeppesen's control.

More fundamentally, however, existing products liability law is contrary to Jeppesen's position. Assuming that the Government's instrument approach procedure was defective, the literal requirements of section 402A are met. Jeppesen's chart was a "product in a defective condition unreasonably dangerous to the user" within the meaning of section 402A(1). Section 402A(2)(a) provides that strict liability is appropriate even though "the seller has exercised all possible care in the preparation and sale of his product." A seller is strictly liable for injuries caused by a defective product even though the defect originated from a component part manufactured by another party. . . . Accordingly, the appropriate focus of inquiry is not whether Jeppesen caused the product to be defective, but whether the product was in fact defective.<sup>82</sup>

Since the plaintiffs had introduced sufficient evidence to support a finding that the chart was defective, the appellate panel upheld the application of strict liability.<sup>83</sup>

The plaintiffs had admitted the negligence theory to the jury as a failure to adequately test or warn. The chartmaker argued that it had no duty to control the federal government in this area and no ability to alter the improper and dangerous approach procedures.<sup>84</sup>

Both arguments miss the point . . . Jeppesen can be held liable for negligently failing to detect the defect in the product that it marketed. If it had discovered the defect, Jeppesen would have been required either to warn the users of the chart or to refrain from selling the product.<sup>85</sup>

Finally, Jeppesen argued that it was "unfair to hold a chart manufacturer strictly liable for accurately republishing a government regulation."<sup>86</sup> The court of appeals

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<sup>82</sup> *Id.* at 1296 (citation omitted). For the full text of RESTATEMENT (SECOND) OF TORTS § 402A, see *supra* note 11.

<sup>83</sup> 767 F.2d at 1297.

<sup>84</sup> *Id.*

<sup>85</sup> *Id.*

<sup>86</sup> *Id.*

would have agreed with Jeppesen on this point if it were relevant to the case:

This case, however, does not present that situation. Jeppesen's charts are more than just a republication of the text of the government's procedures. Jeppesen converts a government procedure from text into graphic format and represents that the chart contains all necessary information.<sup>87</sup>

Since Jeppesen's charts were far more than a "mere republication" of the basic government data, the appellate court held that "Jeppesen assumed the responsibility for insuring that the charts are not unreasonably dangerous in their intended use."<sup>88</sup> The judgment of the district court was affirmed in all respects.<sup>89</sup>

#### CASES AGAINST THE FEDERAL GOVERNMENT

As *Brocklesby* suggests, the federal government is a potential defendant in accidents involving erroneous aeronautical charts.<sup>90</sup> The United States itself independently publishes many aerial maps and has been held liable for mistakes and omissions in them. While negligence is the only theory available against the United States,<sup>91</sup> and the procedures under the Federal Tort Claims Act<sup>92</sup> require special attention,<sup>93</sup> there are nevertheless similarities to the Jeppesen cases. For example, the claimant must still

<sup>87</sup> *Id.* at 1298.

<sup>88</sup> *Id.* The court concluded that Jeppesen's charts were not a privileged "public journal" under CAL. CIV. CODE § 47(4). 767 F.2d at 1298.

<sup>89</sup> 767 F.2d at 1299.

<sup>90</sup> As in *Brocklesby*, the federal government may be independently liable for establishing an unsafe approach procedure in the first place. *See, e.g.*, *Foss v. United States*, 623 F.2d 104 (9th Cir. 1980) (FAA negligent in publishing unsafe traffic pattern to allow clearance of known ground hazards). *But cf.* *Colorado Flying Academy, Inc. v. United States*, 506 F. Supp. 1221 (D. Colo. 1981) (policy judgment in establishing terminal control area design fell within discretionary function of the Federal Tort Claims Act, precluding federal liability), *aff'd*, 724 F.2d 871 (10th Cir. 1984).

<sup>91</sup> *See, e.g.*, *Wolfe v. United States*, 604 F. Supp. 726 (S.D. Cal. 1985) (strict liability unavailable in swine flu vaccine case).

<sup>92</sup> Federal Tort Claims Act, 28 U.S.C. §§ 1346(b), 2671-2680 (1982).

<sup>93</sup> *See, e.g.*, *Abney, Suing Uncle Sam in Tort*, 5 CAL. LAW. 31 (1985).

establish the existence of a defect and proximate cause. Further, the defendant will still deny all responsibility, taking full advantage of any applicable Federal Tort Claims Act defenses.<sup>94</sup>

*Medley v. United States*<sup>95</sup> presents the unique situation of the federal government creating an unsafe flight route and then preserving the initial destructive error in an aeronautical chart that contained no warning of the extreme danger. Working with the National Oceanic and Atmospheric Administration cartographers, the FAA charted a mountain pass route over Kearsarge Pass in the King's Canyon area of the Sierras. Because of misleading elevation marking on the map and the treacherous terrain, several planes using the FAA route became trapped in the Center Basin blind canyon and crashed. The surviving victims and their insurance carriers sued the federal government for wrongful death, personal injury, and property damage.<sup>96</sup>

The plaintiffs asserted that the United States was negligent in deciding to chart the mountain pass route at all, in failing to place a warning on the resulting sectional chart, in selecting where and how to depict the route on the map, in not reviewing the chart for accuracy, and, finally, in failing to promptly remove the route and warn unsuspecting pilots once the hazardous character of the route was obvious.<sup>97</sup> The United States moved for summary judgment, contending that even if it had been negligent, it was immune from suit under the "discretionary function exception" to the Federal Tort Claims Act.<sup>98</sup> This exception provides continued sovereign immunity to the United States for:

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<sup>94</sup> See generally Annot., *Liability of United States for Negligence of Person Other than Air Traffic Controller in Connection with Aviation Control Operations*, 47 A.L.R. FED. 85, 108-11 (1980 & Supp. 1985).

<sup>95</sup> 543 F. Supp. 1211 (N.D. Cal. 1982).

<sup>96</sup> *Id.* at 1213-15.

<sup>97</sup> *Id.* at 1216.

<sup>98</sup> *Id.* at 1214. See Federal Tort Claims Act, *supra* note 92, § 2680(a).

Any claim based upon an act or omission of an employee of the Government . . . based upon the exercise or performance or the failure to exercise or perform a discretionary function or duty on the part of a federal agency or an employee of the Government, whether or not the discretion involved be abused.<sup>99</sup>

In resolving the government's motion, District Judge Aguilar first concluded that a "discretionary function" was a decision involving the evaluation of such broad factors as the social, financial, economic, political, and public safety aspects of a given policy or plan. A "non-discretionary function" was an operational decision involving the normal day-to-day affairs of the government, even though some "discretion" may have been exercised. District Judge Aguilar was sensitive to the danger of intemperate interference with vital executive policy flexibility and the capacity of the judiciary to effectively evaluate an executive discretionary decision.<sup>100</sup>

The judge conceded that the initial decision to create a route and place it on a sectional aeronautical chart was a public safety policy choice falling within the bounds of the discretionary function exception.<sup>101</sup> He held that the other allegedly negligent acts, however, were merely operational, routine, and non-discretionary tasks related to the adoption of the chart navigational route.<sup>102</sup> Holding the government liable for hazards it had in fact created was especially appropriate in this case:

These alleged acts of the government are clearly of an operational character and so not within the discretionary function exception to liability. The decision of the gov-

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<sup>99</sup> Federal Tort Claims Act, *supra* note 92, § 2680(a). On the application of the discretionary function exception to cases of this type, see Comment, *Discretion and the FAA: An Overview of the Applicability of the Discretionary Function Exception of the Federal Tort Claims Act to FAA Activity*, 49 J. AIR. L. & COM. 143, 155-59 (1983). See also *United States v. Varig Airlines*, 104 S. Ct. 2755 (1984) (latest comprehensive analysis of discretionary function exception by the Supreme Court).

<sup>100</sup> 543 F. Supp. at 1218.

<sup>101</sup> *Id.* at 1218-19.

<sup>102</sup> *Id.* at 1220-24.

ernment to chart a mountain pass route over the Kearsarge Pass was what is known as a "Good Samaritan" act. The government voluntarily undertook to assist pilots to safely fly through the treacherous Kearsarge Pass area. When the government undertakes such a Good Samaritan task, thereby performing certain acts or functions and inducing reliance thereon, the government has a duty to perform the acts and functions with due care. When this duty of care is discharged in a negligent manner, the government is guilty of negligence and it cannot escape liability by invoking the discretionary function exception, . . . for there is not discretion to conduct discretionary operations negligently.<sup>103</sup>

District Judge Aguilar granted the government's summary judgment motion as far as the initial decision to create a route. He denied the rest of the motion and ordered the case to proceed on the merits.<sup>104</sup>

The United States has been more fortunate in cases involving crashes into power transmission lines which were not marked on federal aeronautical charts. For instance, in *Allnutt v. United States*<sup>105</sup> a pilot flying at a high speed up the Osage River crashed after striking power lines which were unmarked on the federal sectional aeronautical chart. The court denied the resulting wrongful death suit, holding that the chart contents conformed to the applicable cartographic standards and that the pilot's contributory negligence was a complete bar in any event under the controlling state law.<sup>106</sup> Similarly, in *Hahn v. United States*<sup>107</sup> the government was absolved from liability for the crash of a plane that hit an electrical transmission cable because it was operating below the statutory minimum altitude. Since this particular line was accurately and properly marked on the pertinent aeronautical charts in accordance with reasonable FAA guidelines, the court

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<sup>103</sup> *Id.* at 1221-22 (citations omitted).

<sup>104</sup> *Id.* at 1224.

<sup>105</sup> 498 F. Supp. 832 (W.D. Mo. 1980).

<sup>106</sup> *Id.* at 842.

<sup>107</sup> 535 F. Supp. 132 (D.S.D. 1982).



could find no proximate connection between the chart and the crash.<sup>108</sup>

Airplane collisions with guy wires have generated mixed results. In *Reminga v. United States*<sup>109</sup> the FAA promulgated a sectional map which falsely depicted the location of a 1720 foot television tower on the south side of a railroad line when it was actually on the other side. Apparently depending on the chart in poor weather, a pilot following the railroad tracks on the supposedly clear and safe north side struck the tower support cables and crashed. Applying the heart of the "Good Samaritan" doctrine, the court held the United States responsible for the tragedy:

Though not required by law to do so, when the FAA arranges for the publication of aeronautical navigation charts and engenders reliance on them, it is required to use due care to see that they accurately depict what they purport to show. Failure to show the location of the tower accurately rendered the United States liable for injury to those who relied upon the chart.<sup>110</sup>

The court reached the opposite result in *Knight v. United States*,<sup>111</sup> where a pilot using a slightly out-of-date sectional map smashed into the guy wires of a new, unmarked radio tower. Since the pilot had recklessly chosen to fly in unsafe conditions of marginal visibility and could not have reasonably expected a new structure to quickly appear on an old chart, the court refused to find that the map was the proximate cause of the crash.<sup>112</sup>

Finally, plaintiffs have generally been successful in suits over charts describing inaccurate runway lighting condi-

<sup>108</sup> *Id.* at 136.

<sup>109</sup> 448 F. Supp. 445 (W.D. Mich. 1978), *aff'd*, 631 F.2d 449 (6th Cir. 1980).

<sup>110</sup> 631 F.2d at 452.

<sup>111</sup> 498 F. Supp. 316 (E.D. Mich. 1980).

<sup>112</sup> *Id.* at 324. *See also* *Fidelity Bank v. United States*, 13 Av. Cas. (CCH) 18,356 (E.D. Pa. 1976) (FAA not liable for plane crash into water tower not marked on sectional chart where pilot error was sole cause).

tions. *Sullivan v. United States*,<sup>113</sup> for example, involved the crash of a plane attempting a night landing at an Alabama airport. The appropriate sectional chart indicated that landing lights would be illuminated all night or upon a pilot requesting their illumination by circling the field. The pilot circled twice, but the FAA field personnel on duty failed to hear the plane and switch on the lights. The plane, running low on fuel, crashed in a desperate landing effort, with grievous injuries to both pilot and passenger.<sup>114</sup>

The victims sued the United States for the erroneous chart and the negligence of the ground employees. The government relied on the discretionary function exception of the Federal Tort Claims Act as a defense, to no avail.<sup>115</sup> Without going into a "detailed analysis," the court refused to allow the discretionary function shield, holding that the preparation and publication of the chart was a routine operation, negligently performed, with proximate harm to the plaintiffs.<sup>116</sup> By undertaking to supply reliable, essential information to pilots, the government became responsible for the consequences of its negligence.<sup>117</sup>

Almost the identical situation was replayed, although with fatal results, in *Murray v. United States*.<sup>118</sup> Relying upon a federal aeronautical chart which falsely indicated the runway lighting was on throughout the night without request or that it was available to a pilot who circled the field as a method of requesting lighting, a plane crashed while repeatedly circling the Bryce Canyon, Utah airfield. An FAA specialist finally turned on the lights after it was

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<sup>113</sup> 299 F. Supp. 621 (N.D. Ala. 1968), *aff'd per curiam*, 411 F.2d 794 (5th Cir. 1969).

<sup>114</sup> 299 F. Supp. at 622-24.

<sup>115</sup> 28 U.S.C. § 2680(a) (1982) contains the discretionary function exception to the FTCA. See *supra* notes 98-99 and accompanying text. The government also tried to argue that the chart was a "misrepresentation" given immunity by federal law, but the court did not accept that argument. 299 F. Supp. at 625.

<sup>116</sup> 299 F. Supp. at 625.

<sup>117</sup> *Id.* at 625-26.

<sup>118</sup> 327 F. Supp. 835 (D. Utah 1971), *aff'd*, 463 F.2d 208 (10th Cir. 1972).

too late.<sup>119</sup> The court brushed aside the discretionary function defense and found that the negligence of the United States in publishing incorrect charts proximately caused the tragedy.<sup>120</sup>

In *Baird v. United States*,<sup>121</sup> however, the Court of Appeals for the Tenth Circuit upheld the discretionary function defense. In that case a small plane landing at night on a Kansas airfield overran the runway and crashed, with two killed and one seriously injured. Contrary to information in the Wichita sectional chart, the longest runway was not the one illuminated. However, the true lighting information was readily available to the pilot through other sources. The Inter-Agency Air Cartographic Committee (IACC), a federal agency, had established the chart's symbols.<sup>122</sup> The district court's dismissal of the tort action was upheld on appeal under the discretionary function exception:

Simply put, plaintiffs challenge the Wichita sectional chart because it was too sketchy. This challenge thus goes to the heart of the IACC's deliberative and judgmental activities in designing and approving the extent of detail to be included in aeronautical sectional charts versus the extent of detail left to be gleaned from other sources that the prudent pilot can be expected to consult. Such design and approval activities or choices by the Government fall within the discretionary-function exception and are not actionable under the Federal Tort Claims Act.<sup>123</sup>

The most recent federal decision in this area also centered on the discretionary function exception to government liability. In *Weiss v. United States*<sup>124</sup> a search and

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<sup>119</sup> 327 F. Supp. at 837-39.

<sup>120</sup> *Id.* at 841.

<sup>121</sup> 653 F.2d 437 (10th Cir. 1981), *cert. denied*, 454 U.S. 1144 (1982). The district court opinion was reported in 15 Av. Cas. (CCH) 17,476 (D. Kan. 1979).

<sup>122</sup> 653 F.2d at 438, 441.

<sup>123</sup> *Id.* at 441. In a scholarly dissent, Circuit Judge Doyle argued that an incomplete chart was inherently misleading and unsafe and not within the ambit of discretion. *Id.* at 442-46.

<sup>124</sup> 787 F.2d 518 (10th Cir. 1986).

rescue helicopter operating at about 150 feet above the ground in a Colorado canyon struck an aerial tramway cable which was part of an abandoned mining operation partially located on federal land. The resulting crash seriously injured the pilot and killed a passenger. The pilot and his wife sued the United States for failing to depict the aerial cable on the applicable sectional chart and for neglecting to remove the defunct cable or attach warning devices to it.<sup>125</sup> The district court granted summary judgment for the United States on all claims, although the Tenth Circuit later reversed and remanded on the issue of possible landowner liability.<sup>126</sup>

Writing the court's opinion concerning liability for the chart, Circuit Judge Barrett agreed with the lower court's determination that the discretionary function exception controlled the outcome. He noted that the National Oceanic and Atmospheric Administration (NOAA) cartographers were following very general IACC standards in preparing this particular chart. The IACC guidelines spoke in hortatory language of "general guidance" and "[u]ltmost discretion" in selecting the quality and density of detail to be portrayed.<sup>127</sup> Depiction of obstructions such as aerial cables was mandatory only if they were 200 feet or more in height. The IACC recommended the depiction of shorter obstructions if they were in a "critical" location and if chart congestion allowed the detail.<sup>128</sup>

Faced with vague IACC rules granting the mapmakers in this case broad judgmental flexibility on whether to depict the 150-foot high cable, Circuit Judge Barrett had little difficulty in finding a permissible exercise of discretion in the preparation of the chart. Since the NOAA cartographers were performing a government function under non-mandatory rules, the court properly upheld the discretionary function defense and affirmed the summary judgment.

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<sup>125</sup> *Id.* at 520-21.

<sup>126</sup> *Id.* at 521, 524-27.

<sup>127</sup> *Id.* at 522.

<sup>128</sup> *Id.*

ment in favor of the United States.<sup>129</sup>

### CONCLUSION

In any aircraft mishap in which a misleading aeronautical chart is implicated, a cause of action may exist against the chartmaker, the provider of the erroneous information, or both. In the case of a private map manufacturer, it is now clear that a mass-produced aeronautical chart is indeed a "product" for purposes of strict liability. If the map is in a defective condition unreasonably dangerous to the user and proximately causes harm, the manufacturer will be held to answer in tort. This will be true even if the producer has used all possible care in the preparation and dissemination of the chart, and even if the chart is merely a faithful graphic depiction of data supplied by the national government. The plaintiff may also employ negligence and warranty theories, although those causes of action are more unwieldy and difficult to prove.

Several consequences flow from the judicial willingness to hold private chartmakers strictly accountable for their products. The mapmakers will naturally incur large expenses from the defense and occasional payment of claims arising from defective charts. Considering the recent performance of the insurance industry, insurance coverage will become more expensive and more difficult to obtain. It may become necessary for chartmakers to self-insure, form an independent insurance carrier, or seek some sort of legislative shield from some liabilities. These additional costs will be borne by the direct and indirect consumers of aerial maps. On the positive side, the aeronautical map manufacturers will undoubtedly redouble their already vigorous effort to produce accurate, reliable and useful charts. With a modicum of good fortune, the end result will be safer, albeit more expensive, product.

As discussed in this article, the United States may also

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<sup>129</sup> *Id.* at 523-24.

be liable for promulgating unsound aerial charts.<sup>130</sup> Although negligence is the only allowable recovery theory under the Federal Tort Claims Act, plaintiffs have prevailed in suits alleging injury caused by unsafe federal charts. On occasion, the government has successfully denied responsibility by demonstrating that no proximate cause relationship existed between the suspect chart and the crash.<sup>131</sup> The primary mechanism for avoiding liability, however, is the discretionary function exception to the FTCA. Under that statutory exception to federal culpability, there will be no government liability even for a proximately-resulting crash if the government mapmakers have sufficient administrative leeway on how to depict or even whether to portray features on an aeronautical chart and their choice produces a misleading, defective and dangerous map.<sup>132</sup>

The discretionary function defense is by no means a complete bar to suit against the United States. The initial decision to create an aeronautical map may be entirely an executive discretionary decision. Once the map is made, however, it must truly display those items chosen for depiction. Thus, if a transmission tower is shown to the east of a railroad when it actually lies to the west, the government would be responsible for a misled pilot who hits the tower. Moreover, any mandatory regulations or statutes regarding whether or how to depict features on a chart must be followed in order to avoid liability under the FTCA.

The structure of the Federal Tort Claims Act has some interesting implications for this field. Since the FTCA is a limited waiver of sovereign immunity, Congress could create a special exemption for the products of federal chartmakers. An alternative method would be to make all of the rules governing the creation of government maps entirely discretionary. This would still allow liability for

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<sup>130</sup> See *supra* notes 89-123 and accompanying text.

<sup>131</sup> See *supra* notes 107-108 and 111-112 and accompanying text.

<sup>132</sup> See *supra* notes 121-123 and accompanying text.

features incorrectly portrayed, but would narrow the scope of federal responsibility. While there may be some movement in that direction, it does not seem likely that government cartographers will be given carte blanche to place whatever they please on their charts. If discretion is broadened, the added immediate dangers will be borne by air travellers and others in the vicinity of a crash. If government liability results, the financial costs will belong to the public. As with the private mapmakers, the most desirable outcome will be the compensation of the victims of government negligence and the creation of better maps.